

Applicants: Catherine Dulac and Richard Axel
U.S. Serial No.: 09/898,416
Filed July 3, 2001
Page 2

Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application:

1-28. (Canceled)

29-32. (Withdrawn)

33-93. (Canceled)

94. (Withdrawn)

95. (Withdrawn)

96. (Previously Presented) An isolated nucleic acid comprising consecutive nucleotides encoding a vertebrate pheromone receptor protein, wherein the receptor protein comprises seven transmembrane domains and is further characterized by at least one of the following characteristics:

- (a) the loop between the second and third transmembrane domains of the protein, the third transmembrane domain, and the loop between the third and fourth transmembrane domains together comprise consecutive amino acids having the following sequence: -R, G, L or F, S or T or N, L, C or S, A or T, T or A or S, C, L or M, L, S or N or H, V or I, L or F, Q or W, A or T or M, I or F, I or T, L, S, P or S, R or K, S or K, S, C, L, A or T, K or T, F or Y, K, H or Y, K or N- (SEQ ID NO: 19);

(b) the loop between the fifth and sixth transmembrane domains of the protein, and the sixth transmembrane domain together comprise consecutive amino acids having the following sequence: -K, A or S or V, S, P, E or Q, Q, R, A, T, R or Q or E, T or S, I, L or M, M or L or I, L, M or R, S or T, F or L, F, V or G, V or L- (SEQ ID NO: 20); and

(c) the seventh transmembrane domain of the protein comprises consecutive amino acids having the following sequence: -Y, A, T, V or I or L, S, P or S, F or L, V or L, F or L- (SEQ ID NO: 21).

97. (Previously Presented) The isolated nucleic acid of claim 96, wherein the receptor protein is characterized by at least two of the characteristics of (a) through (c).

98. (Previously Presented) The isolated nucleic acid of claim 97, wherein the receptor protein is characterized by all of the characteristics of (a) through (c).

99. (Currently Amended) The isolated nucleic acid of claim 96, wherein the nucleic acid encodes (i) VN1 protein comprising consecutive amino acids having the sequence set forth in SEQ. ID. NO:8, or ~~a protein selected from the group consisting of:~~

~~i) VN1 protein comprising consecutive amino acids having a sequence identical to the sequence set forth in SEQ ID NO: 8,~~

~~ii) VN2 protein comprising consecutive amino acids having a sequence identical to the sequence set forth in SEQ ID NO: 9,~~

~~iii) VN3 protein comprising consecutive amino acids
having a sequence identical to the sequence set
forth in SEQ ID NO: 10,~~

~~iv) VN4 protein comprising consecutive amino acids
having a sequence identical to the sequence set
forth in SEQ ID NO: 11,~~

~~v) VN5 protein comprising consecutive amino acids
having a sequence identical to the sequence set
forth in SEQ ID NO: 12,~~

~~vi) VN6 protein comprising consecutive amino acids
having a sequence identical to the sequence set
forth in SEQ ID NO: 13,~~

~~vii) VN7 protein comprising consecutive amino acids
having a sequence identical to the sequence set
forth in SEQ ID NO: 14, and~~

~~viii) (ii) a protein that shares between 47% and 87%
amino acid sequence identity therewith with any one of
the proteins of i) - vii).~~